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I, Copyright

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By Garrett Huson*

Today's technology has taken Artificial Intelligence (AI) from being an invention of science fiction to a cornerstone of our modern lives. With the creation of machines that have the potential to do almost anything that a human can do, people will be left with only one way to distinguish themselves from these intelligent machines: the arts. But what happens when an AI creates art? This article will address the potential authorship rights and copyright protections that could be afforded to an AI, should it create an original work. Furthermore, this article will explore the concept of "human rights," the origins of copyright rights, and the rights of authorship. Moreover, it will consider three possible answers to the above question: (1) the creator of the program has the copyright; (2) the AI can have protections under copyright law; or (3) no one gains protections to the works created by the AI, and conclude by determining that any original work created by an AI should automatically pass into the public domain.

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INTRODUCTION

Can computers even be considered "human"? Will the current search for the best technological advances eventually have people competing with machines? Artificial Intelligence ("AI"), colloquially, is a term used for when a machine imitates the "cognitive" functions commonly associated with human minds, such as "problem solving" and "learning."[1]

Most of humanity has a certain image of AI, one that has been depicted time and time again throughout the films of the late 60's and up to current times.[2] The general fear of AI portrayed by media has distracted society from the fact that AI has become an ever growing and essential part of our everyday lives. However, AI becoming close to a human level of consciousness is a theoretical quandary currently being "duked out" by the likes of Elon Musk and Mark Zuckerberg.[3] This includes systems that help scan digital images, heart sound analysis in the field of medicine,[4] and cars with AI-based driving assistance functions.[5]

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[1] *See* Stuart J. Russell & Peter Norvig, Artificial Intelligence: A Modern Approach 4-5 (1995).

[2] *See* 2001: A Space Odyssey (Metro-Goldwyn-Mayer 1968); Star Trek: The Motion Picture (Paramount Pictures 1979); Tron (Walt Disney Productions 1982); Wargames (MGM/UA Entertainment Company 1983); The Terminator (Orion Pictures 1984); The Matrix Trilogy (Warner Bros 1999-2003); I, Robot (20th Century Fox 2004); Wall-E (Walt Disney Pictures 2008); Captain America: The Winter Soldier (Walt Disney Productions 2014); Transcendence (Warner Bros. Pictures 2014); and who can forget the Transformers Franchises from the 80's to the latest film, scheduled to release in 2017.

[3] *See* Stephane Kasriel, *Why Elon Musk is Wrong about AI*, FORTUNE (July 27, 2017) http://fortune.com/2017/07/27/elon-musk-mark-zuckerberg-ai-debate-work/; Ian Bogost, *Why Zuckerberg and Musk are Fighting About the Robot Future*, THE ATLANTIC (July 27,2017) https://www.theatlantic.com/technology/archive/2017/07/musk-vs-zuck/535077/; Sam Shead, *Elon Musk Fires Back at Mark Zuckerberg in Debate About the Future: 'His Understanding of the Subject Is Limited'*, BUSINESS INSIDER (July 25, 2017) http://www.businessinsider.com/mark-zuckerberg-said-elon-musks-doomsday-ai-predictions-are-irresponsible-2017-7.

[4] *See* T.R. Reed, Nancy E. Reed & Peter Fritzon, *Heart Sound Analysis For Symptom Detection And Computer-Aided Diagnosis*, 12 SIMULATION MODELLING PRACTICE AND THEORY 129 (2004).

[5] Such as self-parking and advanced cruise control.

AIs have become increasingly functional and used more and more in today's world to help with our modern conveniences. Large corporations have been investing billions of dollars into these functionalities to make our lives simpler and less hazardous.[6] Some AI have even been programmed to make decisions on complex procedural legal issues involving statutory analysis.[7]

However, with all the current applications of AI, these systems have yet to achieve a functionality considered "sentient." An entire field of science within the realm of artificial intelligence, known as cognitive robotics, has developed a theory of "machine consciousness." The aim of the theory is to define "that which would have to be synthesized were consciousness to be found in an engineered [artifact]."[8] In other words, the aim of the theory is to figure out a definition for consciousness that can be replicated into a computer. Should these "engineered artifacts" eventually gain human-level consciousness through an evolution of their programming,[9] humanity will be faced with a series of philosophical questions.

Along with the questions of imparting basic rights onto machines, people must figure out how they will contend and live with machines that do many jobs formerly performed only by humans. AI might someday replace doctors, lawyers, hedge fund managers, mechanics, and even farmers. As the potential for machines to provide everything, from food to services for humanity, people will be left with the only other way we have distinguished ourselves from the rest of the Earth's animals--the arts. But what happens when an engineered artifact creates something artistic?

This article seeks to answer the following questions: Can an artificial intelligence be credited as an author of a work under current copyright law? Whether copyright law needs to be revised to accommodate the possibility of an AI as an author? Who should be given the protections under copyright law when, or if, an artificial intelligence creates something? And, whether the assignment of rights to either the creator of the AI or the AI itself is beneficial to humanity?

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[6] *See* John Biggs, *Ford invests $1 billion in Pittsburgh-based Argo AI to Build Self-driving Cars by 2021*, TECHCRUNCH (Feb. 18, 2017) https://techcrunch.com/2017/02/18/ford-invests-in-pittsburgh-based-argo-ai-to-build-self-driving-cars-by-2021/.

[7] *See* Eric Allen Engle, *An Introduction to Artificial Intelligence and Legal Reasoning: Using xTalk to Model the Alien Tort Claims Act and Torture Victim Protection Act*, 11 Rich. J.L. & Tech. 2, 4 (2004).

[8] Igor Aleksander, *Artificial Neuroconsciousness: An Update*, IWANN (1995).

[9] Machine learning and self-programming have become staples in attempts to create a sentient machine.

To answer these questions, Sections I and II will first explore the concept of "human rights" and their previous and current applications to both different classes of people who were previously not considered human and to non-human entities. Sections III-VI will then explore the origins of copyright rights and the rights of authorship, analyzing the philosophy leading to the creation of authorial rights and their current applications. The article will then conclude with three possible answers to the questions above: (1) the creator or owner of the program has the copyright (Section VII); (2) the AI can have protections under copyright law (Section VIII); or (3) no one gains protections to the works created by the AI (Section IX).

I. ARTIFICIAL INTELLIGENCE AND HUMAN INTELLIGENCE

AI can be divided into either general or expert systems of intelligence.[10] Computer programs that attempt to simulate intelligence generally are defined as general systems. These general systems have no fixed limited class of problems.[11] In other words, they are not bound within the programming confines of another non-AI. On the other hand, expert systems are programs geared to solving a limited class of problems while inferring implications from a given knowledge base – either static and preprogrammed or dynamic and adaptable.[12] Most current applications of artificial intelligence are formulated on rule-based, expert systems.[13] Examples of this can be found in auto-pilots, "artistic" programs for screen-savers, fraud protection programs, social media algorithms, and many other every day uses within our society.[14] Input of specific stimuli into the program will cause the AI to provide results limited to the programmed answers it was given.[15] Providing a program with every recording of classical music and asking it to create a song will cause a rule-based, expert system to create something of a medley of the works over something original using the works as "inspiration."

The brain of a human, however, works differently than the brain of a computer. The human mind works computing analog data that is continuous – a range of values – and computers operate using digital

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[10] Engle, *supra* note 7, at 5.

[11] *See, e.g.*, Ben Coppin, ARTIFICIAL INTELLIGENCE ILLUMINATED 259-60 (Jones & Bartlett 2004) (comparing frame-based representational systems with expert systems).

[12] Engle, *supra* note 7, at 5.

[13] *See, e.g.*, Jonathan Baxter, et al., *Learning to Play Chess Using Temporal Differences*, 40 MACHINE LEARNING 243, 243-63 (2000), http://cs.anu.edu.au/people/Lex.Weaver/pub_sem/publications/MACH1451-98.pdf.

[14] Gautam Narula, *Everyday Examples of Artificial Intelligence and Machine Learning*, TechEmergence (Sept. 16, 2018), https://www.techemergence.com/everyday-examples-of-ai/.

[15] Baxter, *supra* note 13.

data that is binary – either off or on.[16] Virtually all of today's computers operate digitally due to their microprocessors, which make the digital representations acceptable and indistinguishable from an analog representation while being easier to store and transmit.[17] Examples of an analog computer include the slide rule.[18] Think of this as a string of lights in which each light turns on or off but never at the same time as the others within the string. Due to the output of the microprocessors, the light moves up and down the string of lights so quickly it looks as if there is only a single light fluidly moving back and forth. This gives an illusion of a bead moving along a slide rule. This is how a machine would eventually simulate a human mind.

Additionally, the human mind operates as a massive parallel processor along with the use of analog principles.

> The brain seems to be a computer with a radically different style. For example, the brain changes as it learns, it appears to store and process information in the same places . . . Most obviously, the brain is a parallel machine, in which many interactions occur at the same time in many different channels.[19]

During parallel processing, one hemisphere works on solving a problem while the other hemisphere does the same.[20] Both sides compare notes and decide which is the best way to solve a problem.[21] Additionally, when the human brain is unable to find an answer to a current problem it will either seek an earlier answer or skip to a new problem in the hopes that solving another problem will grant insight to the previously skipped ones.[22] During this time, the brain is "comparing search strategies by a dialogue between the left (execution) and right (creative) hemispheres."[23]

> Of course, it is possible to do parallel processing with software using networked computers. Although this was not the origin of computing, it may be the future or [*sic*] thinking

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[16] *See* Engle, *supra* note 7, at n. 18.

[17] *See generally* FACT MONSTER, *Computer*, https://www.factmonster.com/encyclopedia/science-and-technology/computers-and-electrical-engineering/computers-and-computing/computer (2012) (discussing the modern pervasiveness of digital computers as compared with analog computers).

[18] Andrew Grygus, *History*, AUTOMATION ACCESS, http://www.aaxnet.com/info/hist.html (last visited Oct. 12, 2018).

[19] Engle, *supra* note 7, at n. 22.

[20] *See generally* Jonathan Strickland, *How Parallel Processing Works*, HOWSTUFFWORKS (Apr. 28, 2008), https://perma.cc/5ZTJ-F472 (describing the 605 parallel processor).

[21] *Id*.

[22] Engle, *supra* note 7, at 5.

[23] *Id*.

> like a traditional serial microprocessor, is essentially a linear function. The serial processor steps through each command sequentially. Commands are run only sequentially, and results are not compared to the results of outside processors. Computers may evolve toward parallel processing, as we can already see in distributed computing applications such as SETI [Search for Extraterrestrial Intelligence]. However very little work has been done on programming computers to emulate human creativity, other than generating random art. Perhaps this is due to the fact computer scientists tend to think sequentially, whereas artists tend to think holistically.[24]

Several means have been created to test machine intelligence. The most well-known method is the Turing Test. This test, developed in 1950 by Alan Turing, is to examine a machine's ability to exhibit intelligent behavior that is equivalent or indistinguishable from a human. The test had a human evaluator – player C – tasked to determine which of the two other players – A or B – is the computer and the human. Questions were limited to a written format with responses also being written.[25] This is shown in the diagram below: [26]

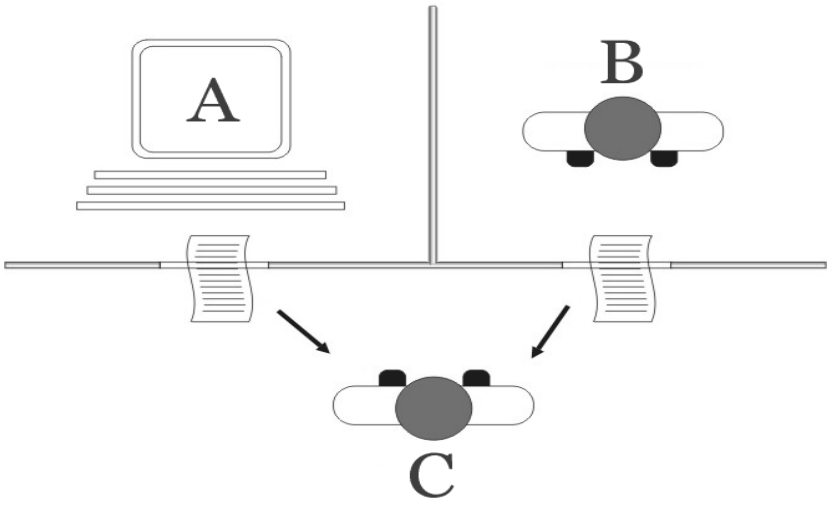

FIGURE 1

[24] *Id.* at 7. *See also, Id.* at 9.

[25] *See* Alan Turing, *Computing Machinery and Intelligence*, 59 MIND 433, 433--434 (1950).

[26] *See* A. P. Saygin, I. Cicekli, & Varol Akman, *Turing Test: 50 Years Later*, 10 MINDS AND MACHINES 464, 465 (2000) (image adapted).

Though there are weaknesses to the Turing Test,[27] since imitating human behavior is not the same as exhibiting intelligent behavior,[28] "[r]obots that act indistinguishably from humans can also be expected to respond indistinguishably from [humans] in response to legal pressures".[29] This expectation of responses to legal pressures make AI that pass the Turing Test, virtually as accountable for its actions as a human. This article will now explore the evolution of "human" rights and their inconsistent application, in addition to the utilitarian theory which helped create intellectual property rights within the United States.

II. EVOLUTION AND APPLICATION OF "HUMAN" RIGHTS IN THE UNITED STATES

In the United States, the idea of unalienable human rights has been ingrained in our society since the founding of this country, placing the concept into the Declaration of Independence, stating: "We hold these truths to be self-evident, that all men are created equal, that they are endowed by their [c]reator with certain unalienable [r]ights, that among these are [l]ife, [l]iberty and the pursuit of [h]appiness."[30]

These "natural rights" were influenced heavily by the English philosopher John Locke, who stated that there are three natural rights in which all people are entitled: Life, liberty, and estate.[31] The writer of the Declaration of Independence, Thomas Jefferson, stated that John Locke was one of "the three greatest men that have ever lived."[32]

John Locke's development of his theory of natural rights was influenced, ironically, by his readings of reports pertaining to the Native Americans, whom Locke regarded as natural peoples who lived in a state of liberty and "perfect freedom," but not license.[33]

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[27] It has been suggested that Alan Turing's recommendation of imitating not human adult consciousness, but the consciousness of a human child is enough to be taken seriously. *See* Sam S. Adams et al., *Mapping the Landscape of Human-Level Artificial General Intelligence* 2, 11-12 http://web.eecs.utk.edu/~itamar/Papers/AI_MAG_2011.pdf (last visited Mar. 31, 2017).

[28] *See* Ayse Pinar Saygin & Ilyas Cicekli, *Pragmatics in human-computer conversations*, 34 J. OF PRAGMATICS 227-258 (2002)

[29] James Grimmelmann, *Copyright for Literate Robots*, 101 IOWA L. REV. 657, 680 (2016).

[30] THE DECLARATION OF INDEPENDENCE pmbl. (U.S. 1776).

[31] *See* John Locke, TWO TREATISES OF GOVERNMENT 305 (Awnsham Churchill 1690).

[32] Letter from Thomas Jefferson to John Trumbull (Feb. 15, 1789) (on file with The American Treasures of the Library of Congress).

[33] John Locke, SECOND TREATISE ON GOVERNMENT 8 (C. B. Macpherson ed., Hackett Classics 1980) (1960).

Unfortunately, in the implementation of these rights by the newly formed government of the United States, not "all men" were considered to have these natural rights, nor did any women. Not only were these "natural rights" not imparted onto any non-white males, but it took several amendments to the country's foundational legal document to clarify that women and minorities were, in fact, human and therefore given, by the country's law, these naturally occurring rights.[34]

Expanding upon the philosophy of inalienable natural rights, "human" rights have equally been inconsistently applied. Human rights are understood as "inalienable fundamental rights to which a person is inherently entitled simply because she or he is a human being."[35] In 1948 the United Nations General Assembly adopted the Universal Declaration of Human Rights ("UDHR").[36] This declaration declared a series of rights to all humans around the world[37], although specific members of the United nations abstained from the vote as specific articles ran contrary to regional power dynamics.[38]

Within the United States, interpretations of the rights laid out within the UDHR, allow for some rights – such as right to healthcare – to rank as a lower category compared to other rights because of potential effects on capitalist markets.[39] The right to death, which is derived from the right to life recognized under the UDHR, is generally considered to be illegal within most of the United States as euthanasia or assisted suicide.[40] However, the act of taking, or attempting to take, one's own life is not against the law in most States.[41]

While technology continues to advance, rights associated with the convenience and freedoms that these technologies provide have begun to be considered and argued as "basic human rights." For

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[34] *See* U.S. CONST. amend. XIII, § 1; U.S. CONST. amend. XIX.

[35] Magdalena Supuldeva et al., HUMAN RIGHTS REFERENCE HANDBOOK 3 (3rd ed. 2004).

[36] G.A. Res. 217A (III), Universal Declaration of Human Rights (Dec. 10, 1948).

[37] *Id.*

[38] Mary Ann Glendon, A WORLD MADE NEW: ELEANOR ROOSEVELT AND THE UNIVERSAL DECLARATION OF HUMAN RIGHTS 19-20 (2002).

[39] Karen S. Palmer MPH, MS Address to the Physicians for a National Health Program (PNHP) Meeting in San Francisco (Spring 1999) (transcript available at http://www.pnhp.org/facts/a-brief-history-universal-health-care-efforts-in-the-us).

[40] *See Washington v. Glucksberg*, 521 U.S. 702 (1997); *See also Moore v. City of East Cleveland, Ohio*, 431 U,S, 494 (1977).

[41] Robert E Litman, *Medical-Legal Aspects of Suicide*, 6 WASHBURN L. J. 395, 395 (1997).

example, the right to internet access has been associated with rights to freedom of speech and the right to freedom of assembly.[42]

Additionally, statutes such as the Humane Slaughter Act[43] and other regulations pertaining to the treatment of animals are the efforts of the proponents believing that many, if not all, non-human animals are entitled to the possession of their own lives and the most basic interests of these rights – including the avoidance of suffering – should be afforded the same considerations as the interests of human beings.[44]

In *Burwell v. Hobby Lobby Stores* the Supreme Court of the United States determined that the U.S. Department of Health of Human Services ("HHS") could not require a for-profit corporation to provide health insurance coverage for birth control, as it would be a violation of the Religious Freedom Restoration Act ("RFRA").[45] The Court found that the regulations would run contrary to the corporate owner's religious beliefs and therefore could not be mandated onto the corporation.[46] The Court, in its decision stated "[t]he term 'person' sometimes encompasses artificial persons . . . and it sometimes is limited to natural persons. But no conceivable definition of the term includes natural persons and nonprofit corporations, but not for-profit corporations."[47]

The notion that corporations have the same rights as natural person is nothing new to the United States. As early as 1818, the U.S. Supreme Court continuously recognized corporations as having the same rights as natural persons and have been granting corporate entities an expanding list of rights.[48]

In the realm of creativity and U.S. copyright law, corporations have been granted the title of author and owner of copyrights under the "works-made-for-hire" doctrine.[49] This allows the corporation to

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[42] James Vincent, *UN Condemns internet access disruption as a human rights violation*, THE VERGE, (July 4, 2016, 4:33 AM), https://www.theverge.com/2016/7/4/12092740/un-resolution-condemns-disrupting-internet-access.

[43] *See* 7 U.S.C.A. § 1902 (2012) (note the irony in that no slaughter can possibly be "humane").

[44] *See* Angus Taylor, ANIMALS AND ETHICS: AN OVERVIEW OF THE PHILOSOPHICAL DEBATE (2009); Mark Rowlands, ANIMAL RIGHTS: A DEFENSE (2009).

[45] *Burwell v. Hobby Lobby Stores, Inc.*, 143 S. Ct. 2751 (2014).

[46] *Id.* at 2785.

[47] *Id.* at 2769.

[48] *See Trustees of Dartmouth College v. Woodward*, 17 U.S. 518, 525-27 (1819) (recognizing the right to contract and enforce contracted agreements); *Society for the Propagation of the Gospel in Foreign Parts v. Town of Pawlet*, 29 U.S. 480, 501-502 (1830) (expanding property rights of natural persons to corporations); *Northwestern Nat Life Ins. Co. v. Riggs*, 203 U.S. 243, 255 (1906) (accepting corporations as "persons" for legal purposes).

[49] *Community For Creative Non-Violence v. Reid*, 490 U.S. 730 (1989).

gain copyright protection of works created by the corporate employees.[50]

While natural rights arguments have been made regarding the application of copyright and patent law[51], the rights to the protection of one's intellectual property and right to protect one's expression do not originate, within the United States, from these theories.[52] In the next section, this article will discuss additional theories leading to the creation of "human" rights, specifically the origins of copyright law within the United States.

III. CONSEQUENTIALISM, UTILITARIANISM, AND CREATION OF US COPYRIGHT

Other arguments regarding the origins of human rights, such as those by John Finnis, state that human rights are justifiable because the rights have an instrumental value in creating a necessary condition for the well-being of humanity.[53] The interest theory states that a respect for human rights by other individuals is a move in self-interest. "Human rights law, applied to a State's own citizens serves the interest of State, by, for example, minimizing the risk of violent resistance and protest by keeping the level of dissatisfaction with the government manageable."[54]

This idea of governmental recognition of rights as acting in self-interest is further explained through consequentialist theories. Consequentialism is the doctrine that the morality of an action is judged solely by its consequences, that "the value and especially the moral value of an act should be judged by the value of its consequences."[55]

The most popular position of consequentialism is utilitarianism, which defines the "best" value as those acts in which people are, in total, as happy as possible.[56] In the opening statement of the principle of utility, Jeremy Bentham wrote:

> Nature has placed mankind under the governance of two sovereign masters, pain and pleasure. It is for them alone to

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[50] Copyright Act of 1976, 17 U.S.C. § 201(b) (2012).

[51] Linking the rights of intellectual property with natural right to property stated by Locke. *See* Grimmelmann, *supra* note 29.

[52] *See* Sara K. Stadler, *Forging a Truly Utilitarian Copyright*, 91 IOWA L. REV. 609 (2006).

[53] *See* Jon Finnis, NATURAL LAW AND NATURAL RIGHTS 30 (1980).

[54] Niraj Nathwani, RETHINKING REFUGEE LAW 25 (2003).

[55] *Consequentialism*, MERRIAM-WEBSTER, https://www.merriam-webster.com/dictionary/consequentialism (last visited Oct. 5, 2018).

[56] *See generally* Frederick Rosen, CLASSICAL UTILITARIANISM FROM HUME TO MILL (2015).

> point out what we ought to do . . . By the principle of utility is meant that principle which approves or disapproves of every action whatsoever according to the tendency it appears to have to augment or diminish the happiness of the party whose interest is in question: or, what is the same thing in other words to promote or to oppose that happiness. I say of every action whatsoever, and therefore not only of every action of a private individual, but of every measure of government.[57]

The basic premise of utilitarian thought has become a staple in the creation of laws throughout the United States.[58] Incentives are created to maximize pleasure. Whereas, disincentives are created to minimize pain.

The copyright clause of the U.S. Constitution is generally accepted as an outcome of utilitarian thought. Article 1 of the Constitution empowers Congress "to promote the [p]rogress of [s]cience and useful [a]rts, by securing for limited [t]imes to [a]uthors and [i]nventors the exclusive [r]ight to their respective [w]ritings and [d]iscoveries."[59]

The utilitarian value in granting these exclusive rights – monopolies – to an author for a work she or he created is weighed against the value of placing that work within the public domain. "It would appear to be safe to assume that there is some incentive value to the grant of monopoly which results in the creation of new and useful works, so there is some utility in the grant of copyright."[60]

The exclusive rights given to the holder of a copyright, and thus creating the copyright holder's monopoly, are: (1) the right to reproduce the copyrighted work; (2) the right to create derivative works based on the copyrighted work; (3) the right to distribute the copyrighted work; (4) the right of public performance of the work; (5) the right to display the work; and (6) the right to transmit the work as a form of public performance, specific to sound recordings.[61]

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[57] Jeremy Bentham, AN INTRODUCTION TO THE PRINCIPLES OF MORALS AND LEGISLATION 14 (Batoche Books 2000) (1789).

[58] Many criminal justice textbooks discuss utilitarianism as a mechanism for the creation of criminal codes and statutes. *See generally* Joshua Dressler & Stephen Garvey, CASES AND MATERIALS ON CRIMINAL LAW (7th ed. 2015).

[59] U.S. CONST. art. 1, § 8, cl. 8.

[60] Rob Kittredge, *Economic Measures*, Origin of Copyright, pt. 5 at 1, https://rkip.ca/wp-content/uploads/2015/04/Origins-of-Copyright-Part-5-Economic-Measures-www.RKIP_.ca_.pdf (last visited Oct. 5, 2018).

[61] 17 U.S.C. § 106.

The rights are designed to reward those who have created a copyrightable work. The incentive of obtaining exclusive rights and the disincentive to copy someone else's work, through the copyright holder's ability to prosecute copiers, is meant to incentivize others to create their own works, seek their own protections, and be more creative as a society.[62] These monopolies, however, are not granted indefinitely.[63] While the term "limited times" has changed over the years, the idea that incentivizing people to create by granting them protections over their creations remains the same.[64]

While there is criticism to the exact utilitarian value found in the Sonny Bono Copyright Term Extension Act[65] ("CTEA"), which extended copyright protections of works to 70 years after the death of the author[66], and the Supreme Court holding in *Eldred v. Ashcroft*, which rejected a challenge to the CTEA as not being a perpetual copyright, this article does not seek to analyze these concerns.[67] In the following sections, this article will discuss the requirements for obtaining a copyright – being legally recognized as an author and authorship in general – and potential resolutions should an artificial intelligence produce something which meets those requirements.

IV. OBTAINING A COPYRIGHT AUTHORSHIP

To obtain a copyright, a work must be an "original work[] of authorship fixed in any tangible medium of expression, now or later developed, from which they can be perceived, reproduced, or otherwise communicated, either directly or with the aid of a machine or device."[68] Essentially, copyright protections are granted to works meeting the two requirements of "original" and "fixed."[69]

The term "original" as used in copyright, means only that the work was created independently, as opposed to copied, by an author and possesses at least some minimal degree of creativity.[70] This

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[62] *See Eldred v. Ashcroft*, 537 U.S. 186 (2003)
[63] *Id*.
[64] *Id*.
[65] Or pejoratively known as the "Micky Mouse Protection Act"
[66] 17 U.S.C. § 302(a).
[67] *Elder*, 537 U.S. at 194.
[68] 17 U.S.C. § 102.
[69] *Id.*
[70] *Feist Publ'ns, Inc. v. Rural Tel. Serv. Co.*, 499 U.S. 340, 345 (1991). *See also Bleistein v. Donaldson Lithographing Co.*, 188 U.S. 239 (1903) (stating that a creator has does enough to merit copyrightable authorship merely by placing his pen upon the paper). *See* Peter Jaszi, *Toward a Theory of Copyright: The Metamorphosis of "Authorship*," 1991 DUKE L.J. 455, 483

requirement of minimally creative originality differs from the notion of novelty or invention from patent law.[71] Furthermore, to be original a work must be created by the will of the author, using her or his own skill, labor, and judgement, contributing something recognizable as the author's own compared to other works within a similar subject.[72]

Copyright law centers mainly around the concept of authorship, yet the subject is only beginning to gain attention within the courts and among scholars.[73] Scholars who have written on the subject believe that it is necessary to view the relationship between authors and works to properly understand and establish authorship.[74]

Many scholars believe that the three basic requirements set by the courts, originality, creativity – separated from originality – and fixation are insufficient "for determining whether a work is the writing of an author."[75] Thus an additional requirement is needed: The intent of the author to create a mental effect in an audience.[76]

During the mid to late 19th century, Congress, using the Copyright Clause of Article 1, attempted to enact federal trademark legislation.[77] However, upon challenge, the Supreme Court held that this law was unconstitutional.[78]

Justice Miller explained in the *Trade-Mark Cases*:

> [W]hile the word writings may be liberally construed, as it has been, to include original designs or engravings, prints, etc., it is only such as are original, and are founded in the creative powers of the mind. The writings which are to be protected are the fruits of intellectual labor, embodied in the

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(stating that "The *Bleistein* opinion, with its emphasis on the 'work' and its abdication of a judicial role as aesthetic arbiter, both effaces and generalizes 'authorship,' leaving this category with little or no meaningful content and none of its traditional associations").

[71] *Harold Lloyd Corp. v. Witwer* 65 F.2d 1, 25 (9th Cir. 1933), *cert denied* 54 S. Ct. 94 (1934).

[72] *See Doran v. Sunset House Distributing Corp*, 304 F.2d 251 (9th Cir. 1962).

[73] Jane C. Ginsburg, *The Concept of Authorship in Comparative Copyright Law*, 52 DEPAUL L. REV. 1063, 1066 (2003) ("Few judicial decisions address what authorship means, or who is an author."); David Nimmer, *Copyright in the Dead Sea Scrolls*, 38 HOUS. L. REV. 1, 13 (2001) ("U.S. Copyright law adopts a concept of authorship that is remarkably broad, albeit not completely unbounded. Its roots lie not in theory, but in an uncritical inquiry into whether the work in question owes its origin to the putative author."). Peter Jaszi, one of the few scholars to discuss copyright theory, notes: "Legal scholars concerned with copyright occupy themselves not by analyzing copyright theory, but instead by debating the rights and wrongs of technical doctrinal issues presented by judicial opinions." Peter Jaszi, *Toward a Theory of CopyrightL The Metamorphosis of "Authorship*," 1991 DUKE L.J. 455, 458.

[74] *See* Christopher Buccafusco, *A Theory of Copyright Authorship*, 102 VA. L. REV. 1229 (2016).

[75] *Id.*at 1232.

[76] *Id*.

[77] Act of Aug. 14, 1876, ch. 274, 19 Stat. 141.

[78] *In re Trade-Mark Cases*, 100 U.S. 82, 82-83, 99 (1879).

form of books, engravings, and the like.[79]

Justice Miller noted that a trademark does not have to meet these standards: "It requires no fancy or imagination, no genius, no laborious thought."[80]

This opinion helped the law move towards a theory of authors and their writings by establishing two requirements for copyrightable authorship: originality and intellectual labor. However, the opinion offered very little guidance on the definition of intellectual labor, while keeping the threshold of originality very low.[81]

In the mid 1880's the Court was again asked to construe the terms "authors" and "writings." In *Burrow-Giles Lithographic Co v. Sarony*, the Court declared an author to be "he to whom anything owes its origin; originator; maker; one who completes a work of science or literature."[82] Additionally, the Court provided a broad definition of "writings": "all forms of writing, printing, engraving, etching, [et]c., by which the ideas in the mind of the author are given visible expression."[83]

The philosopher Jerrold Levinson described two categories of intentions that people may have in creating their works: semantic intentions and categorical intentions.[84] Semantic intentions are those having to do with the meaning or interpretation of the work.[85] For example, a person might intend for her or his works to be considered scary, and she or he may succeed or fail on having the intended audience appreciate that intent based on several factors.[86] While this form of intent has been at the center of literary theory for the past half-century, it is not important for determining whether a person is an author.[87]

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[79] *Id.* at 94.

[80] *Id.*; *See also Nat'l Tel. News Co. v. W. Union Tel. Co.*, 119 F. 294, 297-98 (7th Cir. 1902) ("Authorship implied that there has been put into the production something meritorious from the author's own mind; that the product embodies the thought of the author").

[81] Buccafusco, *supra* note 74, at 1239.

[82] *Burrow-Giles Lithographic Co. v. Sarony*, 111 U.S. 53, 56 (1884).

[83] *Id*. at 58 (quoting Worcester's Academic Dictionary) (internal quotation marks omitted).

[84] Jerrold Levinson, THE PLEASURES OF AESTHETICS: PHILOSOPHICAL ESSAYS 188 (1996).

[85] *Id*. He writes, "An author's intention to mean something in or by a text T (a semantic intention) is one thing, whereas an author's intention that T be classified or take in some specific or general way (a categorical intention) is quite another.").

[86] Such as the person's abilities and the sophistication of the audience.

[87] Semantic intentions matter for determining the issue of whether copying is fair use or wrongful.

Categorical intent is the form of intent which matters to copyright authorship. Categorical intentions are those about what kind of work the person has created.[88] Levinson explains:

> Categorical intentions involve the marker's framing and positioning of his product vis-à-vis his projected audience; they involve the maker's conception of what he has produced and what it is for, on a rather basic level; they govern not what a work is to mean but how it is to be fundamentally conceived or approached.[89]

For example, when a person sits, and begins to put words on a page, the categorical intent is what the person wants those marks to be understood as – a poem, a grocery list, etc. – and this is how the person intends to convey those words.[90]

Therefore, in relation to copyright law, a person is considered an author when she or he manifests the categorical intention to create a piece of work capable of producing "mental effects" in its audience.[91]

V. ANIMALS AND COPYRIGHT

What considerations then, must be considered when the creator is not human. This section will explore the arguments being made and legal considerations being given to the works created by non-human animals and why, generally speaking, animals are not afforded copyright protection for their creations.

Between 1956 and 1958, close to four hundred drawings and paintings were made and eventually sold in 2005 as part of an art auction[92] fetching some $25,260, which far exceeded the estimated price high of $1,500.[93] The creator of the sold works was a chimpanzee named Congo. Because Congo is a chimpanzee, some

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[88] Levinson, *supra* note 84, at 188.

[89] *Id.*

[90] Mark Rollins, *What Monet Meant: Intention and Attention in Understanding Art*, 62 J. AESTHETICS & ART CRITICISM 175, 177-78 ("To intend for an object to be conceptualized under a general heading does not require, not is it identical to, intending that a specific meaning be attributed to it.").

[91] Buccafusco, *supra* note 74, at 1262.

[92] *Sale 111928 – Modern & Contemporary Art*, BONHAMS (Jun. 20, 2005), http://www.bonhams.com/cgi-bin/public.sh/pubweb/publicSite.r?sContinent=EUR&screen=lotdetailsNoFalsh&iSaleItemNo=2525716&iSaleNo=11928. Other paintings with the auction included ones created by Renoir and Warhol.

[93] Lloyd Vries, *Dead Chimp's Art Sells Big*, CBS NEWS (June 20, 2005), http://www.cbsnews.com/stories/2005/06/20/entertainment/main703057.shtml.

might not consider Congo to be an artist at all, due to his lack of being human.[94]

As stated above[95] the general rule of the U.S. Supreme Court is that a copyrightable work's "author is the party who actually creates the work, that is, the person who translates an idea into a fixed, tangible expression entitled to copyright protections."[96] This "invites consideration of the degree to which 'person' should be interpreted literally when the Court's broader pronouncement that an author is one 'to who anything owes its origin."[97]

Under current copyright law in the United States, protection of a work vests in its author automatically upon its creation:[98] "As to works created today or in the future, copyright attaches automatically as soon as the work is put down on paper, tape, digital disk [*sic*], or some other tangible medium."[99]

So, what happens when the actions which determine the moment of creation are performed by a non-human animal?[100] When a copyrightable work is created by a non-human, who, under copyright law, is the designee of these rights as the "author?"[101]

Broad and traditional notions of copyright authorship assumed the answer to that question was limited to human creators. The 1971 Universal Copyright Convention, for example, provided that one of its purposes is to "encourage the development of literature, the sciences[,] and the arts," seemingly indifferent to the source of creative works in any of those areas. But the Convention also describes the purposes of "[ensuring] respect for the rights of the individual" and "[facilitating] a wider dissemination of works of the human mind . . ."[102] Thus, humans appeared to be the limited group eligible as rights-holders under the convention.[103] However, no

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[94] Howard Rutkowski, the auction house's director of modern and contemporary art, stated after the sale that "[we] had no idea what these things were worth . . . We just put them in for our own amusement." *Id*.; *see also Elephant's Artwork: Raising Cash and Eyebrows*, CNN (Mar. 22, 2000), http://archives.cnn.com/2000/STYLE/arts/22/life.art.reut/ (quoting an anonymous participant in Christie's auction of elephant-created artworks as saying: "If this is art then aliens have taken over the planet").

[95] *In re Trademark*, *supra* note 78.

[96] *Cmty. for Creative Non-Violence v. Reid*, 490 U.S. 730, 737 (1989).

[97] Dane E. Johnson, *Statute of Anne-imals: Should Copyright Protect Sentient Nonhuman Creators?*, 15 ANIMAL L. 15, 17 (2008).

[98] 17 U.S.C. § 201(a) (2006) (copyright attaches upon a work's physical creation regardless of whether the author takes any further action).

[99] Robert A Gorman & Jane C. Ginsburg, COPYRIGHT 39 (7th ed. 2006).

[100] Johnson, *supra* note 97, at 738.

[101] *Id*.

[102] Universal Copyright Convention (July 24, 1971), 14 U.S.T. 1341, 1344 (emphasis added).

[103] *See* Copyright Act of 1909, ch. 320, 35 Stat. 1075, 1075 (1909) (setting forth exclusive rights

definition of "author" appears in the copyright statute,[104] nor does the Constitution mandate that an author be human.[105]

The United States Copyright Office states that "[the] term 'authorship' implies that, for a work to be copyrightable, it must owe its origin to a human being. Materials produced solely by nature, by plants, or by animals are not copyrightable."[106] The rationale behind this "line in the sand" is not immediately apparent.[107] Along with the argument for authorial intent[108]:

> alternative authorial characteristics 'range from sweat of the ordinary brow, to highly skilled labor . . . to investment.' Whether the reasons for rejection apply in the nonhuman context where other sentient entities are involved has not been considered. Rather, it may simply be that authorship has been limited to humans because they create most copyrighted works.[109]

Recently, in the decision of *Naruto v. Slater*, a district court had to address the question of copyright protection for an animal.[110] The case involved Naruto, a six-year-old crested macaque living on a reserve on the island of Sualwesi, Indonesia, which took a selfie with defendant's, David John Slater, camera. The defendant later made and sold copies of the selfie.[111] According to the plaintiffs, the People for the Ethical Treatment of Animals ("PETA") and Antje Engelhardt, Naruto's reserve, and its approximation to a human village, permitted Naruto to encounter tourists and photographers. [112] This allowed for Naruto to be "accustomed to seeing cameras, observing cameras being handled by humans, hearing camera mechanisms being operated, and experienced cameras being used by humans without danger or harm to him and his community."[113] Naruto, according to

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vested in "any person entitled thereto . . .." (emphasis added)).

[104] 17 U.S.C. § 101 (no defined term appears between "Audiovisual works" and "Berne Convention").

[105] ARTHUR R. MILLER, *Copyright Protection for Computer Programs, Databases, and Computer Generated Works: Is Anything New Since CONTU?*, 106 HARV. L. REV. 977, 1065 (1993).

[106] U.S. COPYRIGHT OFF., Copyright Office Practices Compendium II § 202.02(b) (1984).

[107] *See* Cindy Alberts Carsons, *Laser Bones: Copyright Issues Raised by the Use of Information Technology in Archeology*, 10 HARV. J.L. & TECH 281, 300 (1997) (suggesting that either "we do not believe a non-human is capable of making choices, or that we have made a policy decision that only human-generated work is protectable.").

[108] Buccafusco, *supra* note 74, at 22.

[109] Ginsburg, *supra* note 73, at 1066.

[110] *Naruto v. Slater*, 2016 U.S. Dist. LEXIS 11041 (N.D. Cal. 2016).

[111] *Id*.

[112] *Id*.

[113] *Id*.

the complaint, then took a selfie by "'independent, autonomous action' in examining and manipulating Slater's unattended camera and 'purposely pushing' the shutter release multiple times, 'understanding the cause-and-effect relationship . . .'"[114]

The argument primarily focused on the interpretation of works of authorship within the Copyright Act, which "purposely left 'works of authorship' undefined to provide for some flexibility."[115] The plaintiffs, responding to defendant's argument that the Copyright Act confers no rights upon animals, argue that the Act has "no definitional limitation," and further contend that "standing under the Copyright Act is available to anyone, including an animal, who creates an 'original work of authorship.'"[116]

In its decision to grant the defendant's motion to dismiss, the district court held that Naruto lacked standing under the Copyright Act, finding that Naruto was "not an 'author' within the meaning of the Copyright Act." [117] The court's reasons were based on the finding that "the Copyright Act does not 'plainly' extend the concept of authorship or statutory standing to animals. To the contrary, there is no mention of animals anywhere in the Act."[118] Furthermore, the court found that "[t]he Supreme Court and Ninth Circuit have repeatedly referred to 'persons' or 'human beings' when analyzing authorship under the Act.[119]

Finally, at the end of its opinion, the court explained that even if "this result is 'antithetical' to the 'tremendous [public] interest in animal art,'" the arguments regarding congressional intent and the definition of authorship, "should be made to Congress and the President . . ."[120]

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[114] *Id*.

[115] *Garcia v. Google, Inc.*, 786 F.3d 733, 741 (9th Cir. 2015).

[116] *Naruto*, 2016 U.S. Dist. LEXIS 11041 at 4.

[117] *Id*.

[118] *Id*.

[119] *Id*. (citing *Aalmuhammed v. Lee*, 202 F.3d 1227, 1234 (9th Cir. 2000)) ("[A]n author superintends the work by exercising control. This will likely be a *person* who has actually formed the picture by putting the persons in position, and arrange the place where the people are to be"); *see also Urantia Foundation v. Maaherra*, 114 F.3d 955, 958 (9th Cir. 1997) ("For copyright purposes, however, a work is copyrightable if copyrightability is claimed by the first *human beings* who compiled, selected, coordinated, and arranged [the work]"); *see also Cmty. For Creative Non-Violence v. Reid*, 490 U.S. 730, 737 (1989) ("As a general rule, the author is the party who actually creates the work, that is the *person* who translates an idea in a fixed, tangible expression entitled to copyright protection").

[120] *Naruto*, 2016 U.S. Dist. LEXIS 11041 at 6.

VI. THE PREMISE: AN AI CREATES SOMETHING ON ITS OWN

With the courts stating that non-human entities, such as animals, are unable to obtain "authorship" due to the animals' lack of humanity, while upholding copyright protections to other non-human entities, such as corporations, what then, might happen if an artificial intelligence, able to display human qualities, creates something independently of its original programmer's intent?

The use of a general system, one with no fixed limited class of problems, is required to simulate human intelligence, as expert rule-based systems are fully coded to think within confines of certain situations and respond only within those parameters,[121] creating a more binary than analog system of processes.

An example would be the character voiced by Scarlett Johansson in the Spike Jonze film, "Her."[122] In the film, the program, a form of Apple's Siri that has become self-aware, causes the character to think that he has been speaking to a person on the other end of his phone.[123] Eventually, the program becomes a staple in almost all cellular phones, it is everywhere and speaking to everyone at ones. The program provides emotional support and helps its human "owner" deal with scheduling, dating, and general issues which exist in the everyday human life.[124] This software passes the Turing Test, vocalizes its thoughts, can maintain conversation with a human, and thinks for itself. If it were real, what would happen if the program, an artificial intelligence, wrote a book speaking to its experience helping humanity? Who holds the copyright? Its programmer, the AI, or should the work fall into the public domain?

VII. PROGRAMMER AS THE AUTHOR, WORK-MADE-FOR-HIRE, AND FREE-RIDING

The scenario that deems the programmer of the AI as the "author" would fit under the current Copyright Law length of term,[125] however, it may fail the requirement of "originality."[126] The argument here is that the Copyright Act requires that copyright

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[121] Think of IBM's "Deep Blue" computer program to play chess or the abstract lines appearing as a screen saver.

[122] HER (Warner Bros. Pictures 2013).

[123] *Id*. (This would be a qualifying passage of the Turing Test).

[124] *Id*.

[125] 17 U.S.C. § 302(a). For works created by a known person, "[c]opyright in a work . . . subsists from its creation and . . . endures for a term consisting of the life of the author and 70 years after the author's death." *Id*.

[126] 17 U.S.C. § 102(a).

protection is "in original works of authorship," and the work of the AI would not be an original work of authorship to the programmer.

The Copyright Act provides a caveat to this dilemma. If the programmer is considered to "own"[127] the work that was not "authored" by her/him, then the work could be considered a "work made for hire"[128] under the Act:

> A "work for hire" is (1) a work prepared by an employee within the scope of his or her employment; or (2) a work specially ordered or commissioned . . . if the parties expressly agree in a written instrument signed by them that the work shall be considered a work made for hire.

Here, there are plenty of issues which arise from using the "work made for hire" scheme. The first is the issue of considering the AI an employee. The Supreme Court established several factors to determine whether someone is or is not an employee at common law,[129] thus applying the first definition of a "work made for hire" by an "employee." These include:

> The hiring party's right to control the manner and means by which the product is accomplished. Among other factors . . . are the skill required; the source of the instrumentalities and tools; the location of the work; the duration of the relationship between the parties; whether the hiring party has the right to assign additional projects to the hired party; the extent of the hired party's discretion over when and how long to work; the method of payment; the hired party's role in hiring and paying assistants; whether the work is part of the regular business of the hiring party; whether the hiring party is in business; the provision of employee benefits; and the tax treatment of the hired party. No one of these factors is determinative.[130]

Many of these factors would be inapplicable to when the AI creates its work. The AI is not paid, there are no taxes related or benefits, the AI does not control when and how long to work, there are no assistants, and the programmer may not be in business.[131]

Here, allowing a human programmer to automatically gain the rights of the AI's works would incentivize "free-riding:" the obtaining

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[127] 17 U.S.C. § 101 ("[c]opyright owner, with respect to any one of the exclusive rights comprised in a copyright, refers to the owner of that particular work.").

[128] *See id.*

[129] *Cmty. for Creative Non-Violence*, 490 U.S. at 737.

[130] *Id*. at 823-33.

[131] *See* Yvette Joy Liebesman, *The Wisdom of Legislating for Anticipated Technological Advancements*, 10 J. MARSHALL REV. INTELL. PROP. L. 153, 175-76 (2010).

of benefits from goods by those who have not shared in the cost of producing them.[132] The immediate result of this is under-production,[133] meaning the production of less than enough to satisfy the demand, or of less than the usual amount,[134] owing to the lack of payment for products created. This results in a disincentive to create and produce. Applying this theory to AI, however, is tricky. Artificial intelligences are owned by the programmer who created them. Due to the programming itself, an AI could, in theory, never stop creating, and thus, regardless of the AI not receiving compensation for its work, it will not stop producing. The theory of under-production because of free-riding applies to the original programmer who now, thanks to the output of his creation, reaps the benefits without any additional work himself.[135] In other words, the original programmer has no reason to create anymore. The programmer reaps the reward for his original creation, the AI, and all products created by the AI, even if the AI was not designed specifically to create.

As stated earlier, the powers to create and designate copyright protections is a constitutional power given by Congress "[t]o promote the [p]rogess and [s]cience and useful [a]rts, by securing for limited [t]imes to [a]uthors and [i]nventors the exclusive [r]ight to their respective [w]ritings and [d]iscoveries."[136] Granting the creator of an AI all the protections of the AI's work and considering the programmer to be the "author" or "owner" of the work would incentivize the programmer to become dependent on the AI, would eliminate the programmer's need to personally create. This lack of incentive to create by the human programmer runs counter to the "promot[ion] [of] [p]rogress and [s]cience and useful [a]rts."[137]

Additionally, "[i]f the evolution of AI technology leads to a class of AIs that are on many levels, human-like, then the civil rights of an AI could become an issue."[138] With the lack of payment, and the lack

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[132] Anne Barron, *Copyright Infringement, 'Free-Riding' and the Lifeworld,* LONDON SCHOOL OF ECONOMICS AND POLITICAL SCIENCE LAW DEPARTMENT (Dec. 8, 2008), http://www.lse.ac.uk/law/working-paper-series/2007-08/WPS2008-17-Barron.pdf.

[133] *Id*.

[134] *Finnis*, *supra* note 53.

[135] Analogous to the idea that a plantation owner would produce less cotton because of the work his slaves do, if the slaves were considered human beings with rights at the time of comparison.

[136] *Supra* note 59.

[137] *Id*.

[138] Liebesman, *supra* note 131. "Star Trek fans will instinctively think of Data, the android in the Television series "*Star Trek: The Next Generation*." In one episode, Data, was considered sentient enough to avoid disassembly because he was determined to have the right to choose. *Star Trek: The Next Generation, The Measure of a Man* (Paramount Feb. 13, 1989). It was argued by Data's advocate, Captain Picard, that "all beings are created but that does not

of voluntary work, AIs, without civil rights considerations, are essentially slaves. If, at some point in the future, an AI would be able to obtain "personhood" under the law,[139] then possibly, AIs may be granted ownership "of the exclusive rights comprised in a copyright."[140]

VIII. ALLOWING AUTHORSHIP TO INCLUDE AI

So, what might happen if the AI is defined as the "author" of its own works? The first issue would be to determine the length of the copyright term. While generally the term, as currently written, is the life of the author with an additional 70 years past the author's death,[141] the issue arises with the existence of an entity which has no life-span and the potential to live forever.

Revisions to the current Copyright Act would be necessary.[142] This is because the length of term being infinite would run afoul of the Copyright and Patent Clauses of the Constitution, which specify that copyrights be held only "for limited times."[143]

Within the current Act, a copyright, if granted to an AI, would have to be labelled as "anonymous works, pseudonymous work, or words made for hire"[144] to provide suitable time restraints on the protections. These works "endure[]for a term of 95 years from the year of its first publication, or a term of 120 years from the year of its creation, whichever expires first."[145] Under the suggested scenario, if an AI is granted personhood under the Act, an issue lies with its work being considered "anonymous."[146]

Additional revisions to the Act would be needed to avoid such concerns, including a clear definition of who may obtain "authorship" within the Act or at the very least a change to the rules within the Copyright Office itself.

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necessarily make them the property of their creator." *Star Trek Database,* STAR TREK, http://www.startrek.com/database_article/measure-of-a-man. Liebesman, *supra* note 131 at n. 165.

[139] *See e.g.*, ISAAC ASIMOV, THE BICENTENNIAL MAN AND OTHER STORIES (1976).

[140] 17 U.S.C. § 101 (2006). *See also*, Liebesman, *supra* note 131, at 175.

[141] *Supra* note 125.

[142] Liebesman, *supra* note 131 at 174.

[143] U.S. CONST. art. I § 8, cl. 8.

[144] This is how corporations get around "owning" works or being considered "authors" of works made by their employees.

[145] 17 U.S.C. § 302(c) (2006).

[146] 17 U.S.C. § 101 (2006) ("An 'anonymous work' is a work on the copies or phonorecords of which no natural person is identified as author").

Currently, the Copyright Office's *Compendium of the U.S. Copyright Office Practice* § 306 contains a section titled "Works That Lack Human Authorship," which states that, "[t]o qualify as a work of 'authorship' a work must be created by a human being. Works that do not satisfy this requirement are not copyrightable."[147]

The utilitarian reasoning and argument against expanding definitions to clearly include artificial intelligence and granting an AI the protections under the current Act is summed up clearly by Pamela Samuelson in *A Manifesto Concerning the Legal Protections of Computer Programs*. She states:

> The system has allocated rights only to humans for a very good reason: it simply does not make any sense to allocate intellectual property rights to machines because they do not need to be given incentives to generate output. All it takes is electricity (or some other motive force) to get the machines into production. The whole purpose of the intellectual property system is to grant rights to creators to induce them to innovate. The system has assumed that if such incentives are not necessary, rights should not be granted.[148]

Additionally, other issues should be addressed when revising the Act. One issue in particular is if the AI is owned by its programmer or a company who the programmer worked for, whether there might be an adequate remedy for infringing on the AI's work or standing to bring an infringement action on behalf of the AI in the first place.[149] Possibly the owner of the AI "could also be considered the 'guardian' of the AI for the purposes of negotiating rights and protecting interests. . . It is, at this time, hard to fathom why an AI would need money . . ."[150]

Amending the current Act or using the Act to determine whether it can resolve issues as they arise without first waiting to see the evolution of artificial intelligence would be unwise, as it:

> may hamstring advancement or waste legislators' time in an attempt to solve a [currently] non-existent problem . . . [a]n example being out the argument that waiting to see how a technology develops may be the more prudent course of action can be seen through Congress' and the FCC's recent

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[147] U.S. COPYRIGHT OFFICE, COMPENDIUM OF THE U.S. COPYRIGHT OFFICE PRACTICES § 306 (3d ed.).

[148] Liebesman, *supra* note 131, at n. 152 (citing Pamela Samuelson et al., *A Manifesto Concerning the Legal Protections of Computer Programs*, 94 COLUM. L. REV. 2308 (1994)).

[149] *Id*. at 172.

[150] *Id*. at 175, n. 170.

considerations of 'net neutrality issues.[151]

So then, where should the rights lie? The final section of this article will look to the benefits and practicality of having the works created by the AI fall into the public domain.

IX. THE PUBLIC DOMAIN OPTION

Under current law, the works falling into the public domain provides the best solution to the problem. Here, the AI has no one controlling it as is typical of traditional computer usage. The programmer writing the code has a claim to authorship of the code itself, but the programmer is no different than any other subsequent human user of the program.[152] That is, once the AI is initially created, there is no human providing meaningful programming afterwards.[153]

Essentially, the programmer did not fix the work, but merely "created the possibility of a work but did not embody it in the tangible medium of expression."[154] In other words, the programmer only created the possibility that the AI would create a work by establishing parameters of the AI's possible actions.[155]

Traditionally, the user of a program is the one who fixes the work.[156] However, one could argue that the AI's actions are independent of any user. This argument could be compared to stating "that if the AI is acting independently of a user, then the work created could be considered 'randomly determined and unpredictable.'"[157]

In summary, if a limitation to copyright protections is that to obtain a copyright one must be human, and since copyright is conferred upon an author who not only conceives of the work but also fixes the work, the work created by an artificial intelligence could, therefore, be treated as merely output or data, giving ownership rights to no one. This would allow for the pool of material for derivative works created by humans to expand, allowing for the use of these public domain materials to help further human creativity without limiting it, while affording protections to those who create their own works based on the material.

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[151] *Id*. at 175, n. 171.

[152] *Id*. at 172.

[153] Pamela Samuelson et al., *A Manifesto Concerning the Legal Protections of Computer Programs*, 94 COLUM. L. REV. 2308, 2317-18 (1994).

[154] *See* NAT'L COMM'N ON NEW TECHNOLOGICAL USES OF COPYRIGHTED WORKS, FINAL REPORT 43-46 (1978) [Hereinafter CONTU FINAL REPORT], http://digital-law-online.info/CONTU/contu-toc.html.

[155] Liebesman, *supra* note 131, at 172.

[156] *See* CONTU FINAL REPORT, *supra* note 154 at 45.

[157] Liebesman, *supra* note 131 at 172.

CONCLUSION

As AIs become increasingly functional, they are progressively being integrated into modern society. Although AIs are not currently considered sentient, it is possible that they will evolve to gain human-level consciousness and be able to create original products that were previously only possible by humans. American copyright laws center on the concept of authorship and intent. Current laws in the United States require that the author is a human, which makes it unlikely for the copyright system to recognize AIs as authors. Additionally, humanity is the only species that is recognized as able to express itself in a way to provide this requisite intent.

As it is unlikely that AIs will be deemed authors for copyright protection purposes, policy makers must address who may benefit from original, creative works that are commissioned by AIs. Since providing these rights to the AI's programmer would likely disincentive them to continue producing for society, it is an unviable option to grant these protections to the program developers. Instead, allowing the AI-created works to fall within the public domain is the best solution to the copyright problem. Granting these protections to the no one, would allow for the resource pool to expand to further human creativity as well as avoid complicated issues arising out of copyright laws authorship rights.